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NASA BUDGET PRESS CONFERENCE

STATEMENT OF JAMES M. BEGGS, ADMINISTRATOR

JANUARY 31, 1984

I am pleased to have this opportunity to discuss President Reagan's proposed budget for NASA for Fiscal Year 1985.

Though modest in growth, this budget is bold in spirit and far-sighted in vision. It reflects the President's commitment to a forward-looking and imaginative initiative for the nation, a permanently manned Space Station. Such a facility will give us a permanent presence in low earth orbit by the early 1990s and will be the cornerstone of our activities in space through the end of the century and beyond.

Inherent in this proposal is the President's vision of the future, which embodies continued United States leadership in space technology, space exploration and the commercial uses of space, while simultaneously encouraging international cooperation with our friends and allies.

Recognizing the importance of research and development to our national economic well-being, the President's five-year projections include real growth in NASA activity of 1 percent a year over the 1986-1989 period. In recent years, such projections have provided for costs to complete programs proposed for the budget year. But in this budget projection they include an allowance for future new initiatives, which are essential to a vital program of leadership in space and in aeronautics. This is a positive step in terms of program outlook and institutional stability. It will allow us to plan our programs more efficiently and to use our resources more effectively.

The President has proposed a NASA budget of just under $7.5 billion for FY 1985. This represents an overall increase of $274 million, or about 4 percent over our present plan for FY 1984.

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With the Space Station program initiative, this budget will enable us to build on our preliminary Space Station planning efforts and to continue engineering and definition studies with emphasis on potential user requirements and long-lead advanced subsystem development.

As we move forward on the Space Station program, we will continue to give top priority to the Space Transportation System by refining its elements to meet our goal of an efficient, reliable and cost-effective system that will fill our space transportation needs through the 1980s and beyond.

In science and applications, the budget provides for continued progress on the Hubble Space Telescope, the Galileo mission to Jupiter, the Venus Radar Mapper and other approved projects and for important initiatives - the Mars Orbiter and the Upper Atmospheric Research Satellite. Finally, it will allow for modest expansion in space research and technology and an increase of 13 percent in aeronautical research and technology.

Since this budget represents, in part, a departure from our budget appropriations' structures of past years, I will summarize the four appropriations we now have.

First, a total of $2.4 billion requested for Research and Development, which comprises about 32 percent of the total budget request. This includes $150 million for the Space Station efforts.

Second, an appropriation of $3.6 billion is requested in the new category of Space Flight, Control and Data Communications for Shuttle production, operations and tracking and data acquisition support.

Finally, our Construction of Facilities account, at $160 million, and our Research and Program Management budget, at $1.3 billion, represent essentially level programs with pricing adjustments.

This partial reordering of categories reflects the appropriations structure Congress created in FY 1984 to mirror NASA's operational role in the Shuttle program. In previous years, production and operations had been included in the R&D account.

Compared with our FY 1984 budget plan, the FY 1985 R&D request is up about $375 million, while the Space Flight, Control and Data Communications request is down $175 million. Even though there is an overall decrease in the appropriations requested for the Shuttle program, flight activity and reimbursements continue to increase because of our paying customers. Plans call for seven to eight Shuttle missions in FY 1984, 11 in FY 1985, 16 in FY 1986 and a continuing increase in payload flight assignments through the end of the decade.

Although mainline Shuttle development has been completed and we are into the operational phase, we are still working on improving performance capability, enhancing the reliability of systems, completing production of the fleet and procuring the necessary spare parts.

Consistent with these goals, other Shuttle-related activities which the budget request will support include:

* The second and third Spacelab missions;

* The launch of the second and third Tracking and Data Relay Satellites to complete our new spaceborne communications relay system;

* Completion of the Shuttle fleet, with delivery of the fourth orbiter, Atlantis (OV-104), in December 1984 and continuing acquisition of structural spares to support the fleet;

* Continued support for a joint program with the Department of Defense to modify the Centaur as an upper stage for the Space Transportation System;

* Improvements to the Space Shuttle propulsion system with emphasis on Main Engine system reliability and Solid Rocket Booster performance; and

* Continued hardware development for the United States-Italian Tethered Satellite System to provide a new capability to conduct space experiments in regions remote from the Shuttle orbiter.

In addition to the Space Station program, other initiatives contained in the FY 1985 budget request include: an Upper Atmospheric Research Satellite and a Mars Geoscience/Climatology Orbiter.

For the past several years we have been developing instruments for a satellite that would, for the first time, make a comprehensive, global measurement of the stratosphere, or the upper layer of the atmosphere. This budget will enable us to begin to develop the Upper Atmospheric Research Satellite that will place these instruments in earth orbit.

A major new flight program to expand our knowledge of Mars is the Mars Geoscience/Climatology Orbiter (MGCO). This budget will permit the initiation of design and development of the orbiter and its instruments, which will measure the planet's geologic and climatic evolution. The MGCO, which will be launched in 1990, is the first of a new series of relatively low-cost Planetary Observers designed to investigate specific questions in planetary science.

We have restructured the Advanced Communications Technology Satellite Program to address the original program objectives without the NASA-funded flight test. The FY 1985 budget will support further technology development and a ground test program, which will allow the United States to remain competitive in this important new technology.

The budget will also support continued advanced research and technology development in the NASA Aeronautics program, which has been the most fundamental ingredient in maintaining the preeminence of United States civil and military aircraft. Major areas of emphasis will be systems technologies of rotorcraft, high performance and subsonic aircraft and advanced propulsion systems.

In an R&D organization such as NASA, it is extremely important to keep the work force at a resonably stable level. Such stability allows us to recruit and hire new scientists and engineers to help keep our work vital and innovative. For the past two years, the NASA Civil Service complement has been stable at approximately 22,000 positions. As a consequence, we have been able to hire almost 600 recent science and engineering graduates in 1983, reversing the upward rise in the average age of our technical work force. We are delighted that the FY 1985 budget provides for a continued stable civil service complement.

In closing, let me say a further word about the President's Space Station proposal.

Needless to say, we are proud and pleased that the President has made a commitment to this effort, and we believe the nation will support it whole-heartedly. Such a multi-purpose manned facility in permanent earth orbit will be of tremendous benefit not only to the United States, but to peace-loving people around the world.

The Space Station will ensure United States leadership in civil space activities during the 1990s. It will help us to develop the commercial, scientific and industrial potential of space, in concert, not in competition with our friends. And it will be an essential stepping-stone to more ambitious space initiatives in the future.

Thank you very much.

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Mars Geochemical orbiter (MGCO): pages 5, 7, 11

Fifth orbiter: pages 8 - 11

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

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Space Station all through

Space Telescope: pages 24-26

FISCAL YEAR 1985 BUDGET PRESS BRIEFING

January 31, 1984

Participants:

James M. Beggs
Administrator

Dr. Hans Mark
Deputy Administrator

C. Thomas Newman
Comptroller

Frank S. Johnson Jr.
Director of Public Affairs

NASA BUDGET BRIEFING

JOHNSON: This is Frank Johnson speaking to you from NASA's Headquarters in Washington, DC. The purpose of our meeting this afternoon is to discuss the fiscal year 1985 budget. I would like to caution you that this year, as in the past, the information that we will be discussing, and it will be handed out, is embargoed until noon tomorrow. There cannot be any discussion, either direct or indirect, about the information. We will take questions after Mr. Beggs has made a few opening remarks. We are connected with the Johnson Space Center and the Kennedy Space Center. We will take questions from there as well. I'd like to introduce Mr. James M. Beggs who is Administrator of NASA and he will be joined immediately following his remarks by Dr. Hans Mark, the Deputy Administrator, and by Mr. C. Thomas Newman, who is NASA's Controller. Mr. Beggs.

BEGGS: You blew that, Frank. He's the Comptroller. I'm obviously very pleased to present this budget to you. We are very pleased to be able to discuss the 1985 budget initiatives of the President. Although the total is up about four percent, the content of this program is up far more than that. It reflects, of course, the President's commitment to a very forward-looking and imaginative series of initiatives which will give the nation a permanently manned space station. Such a facility, of course, will give us a permanent presence in lower earth orbit in the

early '90s and will be, of course, the cornerstone of our activities through the '90s into the 21st century. Inherent in the proposal for the space station is the President's vision of the future which embodies continued United States leadership in space technology, space exploration and the commercial uses of space, while simultaneously encouraging international cooperation with our friends and allies, and that's always been a hallmark of this program. Recognizing the importance of R&D to our national economic well-being, the President's five year projections include a real growth in NASA activity of about one percent a year over the 1986-89 period. In recent years, you will recall, NASA has budgeted in such a way as to provide for the costs of completing its programs in any given budget year. Budget projection this year is different in that it allows some growth and a continuing expectation that there will be new initiatives as we go through the out years. And they, of course, are essential if we're to maintain our leadership and the thrust that we have begun, these past few years. So it is a very positive step. The President has proposed a NASA budget of just under 7.5 billion for FY 85. It represents an overall increase of 274 million dollars over the 84 plan. With the space station initiative, the budget will permit the preliminary space station planning efforts and continuing the engineering and definition studies with emphasis on potential user requirements and long lead type advanced technologywork. In science and applications,

the budget provides for continued progress on the Hubbell Space Telescope, the Gallileo mission to Jupiter, the Venus Radar Mapper and the other approved programs and initiatives we've begun in the last few years. And it also contains two important new initiatives: the Mars orbiter and an upper atmosphere research satellite. Finally, it will allow expansion of space research and technology and an increase of about 13% in aeronautical research and technology. One thing I should call your attention to - the listing of the budget is a little different this year than it has been in previous years in that it is divided into four appropriations. The first 2.4 billion dollars is requested for research and development. That is about 32% of the total budget and includes 150 million dollars for the space station program. Second, an appropriation of 3.6 billion dollars, which is requested for a new category of space flight, control and data communications, for shuttle production, operations, and tracking and data acquisition support. And finally, the C of F count, at a 160 million dollars, which represents, simply, growth in real terms for our facilities, and the research and program management budget of 1.3 billion. And both of those represent essentially level programs. The partial reordering of categories reflects the appropriations structure Congress created in FY 84 to mirror NASA's operational role in the shuttle program. In previous years, production and operation for the shuttle had been included in the R&D account. Compared

with FY 84, the 85 R&D request is up about 375 million, while the space flight, control and data communications request is down 175 million. Even though there is a decrease in that shuttle account we are, of course, increasing our flight rate in the coming year, and will be, as well, finishing the job of upgrading, improving the overall shuttle capability. We are, of course, increasing the reimbursable account from our customers each year. Plans call for from seven to eight shuttle missions in 84, eleven in FY 85, sixteen in FY 86, and it will continue to increase up to the twenty-four per year that we've set in our own plateau. The shuttle activities encompass the following: The second and third Spacelab missions; the launch of the second and third Tracking and Data Relay Satellites to complete our new space-borne communications relay system; completion of the shuttle fleet with the delivery of the fourth orbiter, Atlantis, in December 1984 and continuing acquisition of structural spares to support the fleet, as well as logistic spares; continuing support of a joint program with the DOD to modify the Centaur, an upper stage for the Space Shuttle system; improvements in the Space Shuttle propulsion system with emphasis on the main engine, particularly in the area of reliability, and continued work on the solid r cket booster performance; and continued hardware for the U.S./Italian tethered satellite system to provide a new capability to conduct space experiments. I'd like to discuss just briefly, the other two initiatives in the budget. First of all, as you all know, we

have been developing instruments for a satellite which would, for the first time, make a comprehensive global measurement of the stratosphere, the upper level of the atmosphere. This budget will enable us to begin development of the Upper Atmospheric Research Satellite to place those instruments in earth orbit. In addition, a major new flight program to expand our knowledge of Mars is the Mars Geochemical Climatology Orbiter, MGCO. The 85 budget will permit the initiation of the design and development of the orbiter and its instruments, which will measure the planet's geologic and climatic evolution. The MGCO, which will be launched in 1990, is the first of what we believe will be a new series of relatively lower cost - there isn't any such thing as a low cost planetary program - with relatively lower cost planetary observers designed to investigate specific questions in planetary science. We've restructured the Advanced Communications Technology Satellite program to address the original program objectives without the NASA-funded flight test. The FY 85 budget will further support technology development and a ground test program. We believe that will allow the United States to remain competitive in this important new technology. The budget, of course, also supports continued advanced research and technology development in the NASA aeronautics program and that, of course, is the fundamental ingredient in maintaining a preeminance of U.S. civil and military aircraft, a role this agency's played for a long, long time. Major areas of emphasis will be systems

technologies of rotorcraft, high performance and subsonic aircraft and advanced propulsion systems. In an R&D organization, such as NASA, it is extremely important to keep our work force at a reasonably stable level and to make an input of new talent each year. That ability to recruit and hire new scientists and engineers each year keeps our work force vital, innovative, young, both in age and spirit. For the past two years, the NASA civil service complement has been stable at approximately 22,000 positions. As a consequence of that, this past year we have been able to hire 600 recent science and engineering graduates and we expect to hire another several hundred this year. So we're delighted that the 85 budget continues to provide that stable civil service complement. In closing, let me say one final word about the space station. We, of course, are very pleased and very proud that the President has made a commitment to that effort. We believe the country will support it wholeheartedly. The polls still indicate that the public supports this program very, very well. Such a multi-purpose manned facility in permanent earth orbit will be of tremendous benefit, not only to the United States, but to all of our friends and allies abroad, and we expect them to join us in this important endeavor. We believe the space station initiative will ensure U.S. leadership in civil space activities through the 90s and into the 21st century. It will help us develop the commercial, scientific and industrial potential of space in concert with - not in

competition with - our friends. And it is an essential stepping stone to the more ambitious space initiatives in the future. Thank you very much. That concludes my statement. We'll be happy to take questions.

JOHNSON: Before we get to the questions, just one quick bit of housekeeping. There will be a transcript made of the Q & A's and they will be available. If you want them, there are envelopes at the door as you leave. Please sign them and we'll send them out. Please identify yourselves and your publication.

HINES: Bill Hines, Chicago Sun-Times. What do you figure will be the run-out cost of this new Mars initiative?

BEGGS: Somewhere in the 300 to 375 million dollar category, Bill.

HINES: Let me follow up ..... and Dr. you spoke of relatively low-cost (?). That compares with what cost of, say, for Viking?

BEGGS: Well, Viking was a billion dollar program. You picked one of the more expensive ones that we've run in the last ten years. You answer. Hans is more familiar with planetary probes than I am.

MARK: Pioneer class missions.

FOLEY: (Mostly Inaudible) . . . space station . . . million dollars . . . And if so, what have you cut out of the program for Fiscal '85 which . . .

BEGGS: Well, it was 235 exactly, Theresa, but this ... what we're up to is a technology in the initial... Let me start from

the beginning. When we looked at what we wanted to do here, we studied the past major initiative we've had at NASA. We concluded that it would benefit both the program and proper execution of the program and our ability to execute that program, both, once we had set a schedule and decided what it was going to cost, if we spent the first year and a half to two years in defining the effort and doing the essential technological investigations prior to the time we started to bend metal and cut hardware for the program. So we're going to take a period of time and do that. As a consequence of that, we can tailor that activity really to the level of funding that we lay out. We really are not saying we're going to scale anything or cut anything off. We'll probably do it on a little slower schedule than we had previously planned, but we will do the job as we had planned it.

QUESTION: (inaudible) ... done by contractors . . .

BEGGS: No, no. We'll still be using contractors and we still will be doing our work in much the same style that we had previously planned. We may have a slip of four months or so ... is about what that means.

QUESTION: (inaudible)

BEGGS: The question was, "Have we given up any plans to get a fifth orbiter?" The issue really revolves around the market projections and our ability to fly these machines to a schedule. We had said, way back when, that we could fly each one of the

orbiters, at least for a period of time, eight times a year. We still believe we can do that. You watch us in the next few months, you'll see how well we're progressing towards that because we're going to fly Challenger next week - launching next week on February 3rd. It'll come back on the 11th, I guess, and then we're going to launch it again on April 4th or early in April. That's 35 work days turnaround which will be pretty doggone good if we achieve that and that's almost where we have to be in order to fly them - each one of them - eight times a year. So we're getting pretty good at that. The question with respect to the fifth orbiter has to do with the market projections for the odd years. For the next ten years or so or twenty years. We still think this market is going to develop to the point that it requires perhaps thirty flights a year, in which case we probably would need the fifth orbiter, but we cannot see that market requirement now. You might then ask, how much did you add when you added a space station? The answer to that is about seven flights, which really is not a large number in the total mission model. But we still think there is a potential of the market out there that will require the fifth orbiter, and we'll continue to watch that, and if we see it start to develop, then indeed we'll be back in requesting a fifth orbiter.

WALDROP: Mitch Waldrop, Science Magazine. Mr. Beggs. On the issue of cooperation on the space station, which countries are you talking to about cooperation and is there a possibility that you'd do a joint venture with a private firm?

BEGGS: Let me answer the last part first. Yes. We envision that there will be some private sector cooperation here and possibly substantial investments by the private sector in the initial capability. We've had a lot of feelers on that, a lot of discussion on it. We've got to see the color of their money, but I feel confident that we will see some collaborative activity with the private sector, that they will invest some money in order to make use of the station - commercial use of the station - from the beginning. With respect to the international cooperation, I guess we've talked to everyone. We've talked to the ESA folk, the European Space Agency; we've talked to the Japanese; we've talked to the Canadians; we've talked, off and on, to a number of other countries outside that particular group of countries, although they're the ones you will recognize who have the largest budgets, the largest space budgets, and they're the ones who have collaborated closely with us in the past. They are all very interested. Indeed, all of the countries I've mentioned, have carried on parallel studies of their own - to our space station studies - and it is my view that they will join us to build this station.

MITCHELL: Mike Mitchell (publication inaudible). Back to the fifth orbiter, just a moment. Does this mean that you will allow the production line, then, probably to close at Rockwell, that you kept open to work the spares this year?

BEGGS: Well, the spares go on, Mike. The -- I'm not quite sure how I respond to that. We will take delivery of the final full orbiter in December. To that extent, we will not have a full orbiter in train, but we'll have the structural - that's why we put those structural spares in last year - we will have the structural spares going through the Rockwell plant for the next two or three years - that is beyond this year. So that production lines, if you maintain your tooling current, which we intend to do, and if we maintain a reasonably good cadre of production people, which I think we will do, we will have the ability to start it up and produce another orbiter, at least for the next, probably, three or four years.

EBERHART: Is it your plan that MGCO will be the first of a series of planetary observers that will be dealt with as a line item like the Explorer Program is?

NEWMAN: The approval, in the budget, was for the first orbiter in the series that was recommended by the SSEC - the Solar System Exploration Committee. Whether the follow-on orbiters will be in the future budgets is a matter of future decisions.

BEGGS: But I think that your question deserves a more direct answer. That is our intent, yeah, to make it a continuing program, perhaps not quite like the way we budgeted Explorer, but in that spirit and the same way that we have had a continuing program which moves on and makes a new start every few years.

JOHNSON: Could we have your name and publication please?

EBERHART: Jonathan Eberhart, Science News. The sense in which I asked the question involved whether it would be going back for a new start each time another planetary observer came along, that would be the operative difference ...

BEGGS: Yeah, we have to do that. But we have to do that in the case of the Explorers too. While it is recognized in the budget process that we have a program which is sort of level-funded in the out years, we still have to give the OMB and the Congress, every new Explorer that we initiate.

QUESTION (speaker unidentified): Could you elaborate on your statement that polls show public support for the manned space station. Are you referring to public support of the specific proposal of an eight billion dollar run-out program?

BEGGS: No. I just looked at a Lou Harris survey which crossed my desk here recently, which seemed to say that like 70% of the respondents of the survey indicated they thought space station was a good idea, even though it was added gratuitously, they didn't quite know what we were going to do with it, which I'll allow. But they support the idea.

COVAULT: Craig Covault, Aviation Week. Two questions. First for Tom Newman. If you could look on the space station budget projections for the next several years, as far as you have them in the book, and run those projections, and while you're looking that up, a question for Mr. Begg. Jim, over the past several years you've had a pretty high priority on getting a commitment

to at least a level, if not somewhat increasing NASA budget on a long-term basis to prevent the peaks and valleys. With the 1% growth, do you feel you've been successful in doing that and if so, does that 1% include the station money?

BEGGS: Yeah, it does. The one percent does include the station. As you know, Craig, the thing that has hurt this agency in the past has been the ups and downs in the budget. We feel that, if we can maintain a level budget, in real terms, that we can provide new start wedges in the out years and indeed, with that one percent growth, there is room for new starts in the out years, as well as room for finishing the shuttle, as we have it planned, and for doing the space station, as we have it planned. You will notice, in the out years, that the run-out figures move from the current level of the 1985 proposed level of 7.5 billion to 7.9 in '86, 8.3 in '87, 8.8 in '88, and 9.2 in 89. We think that gives us enough room and if we can plan on that for that five year period, I think we'll do very well.

QUESTION: (Inaudible)

NEWMAN: Well, we have the 150 million in Fiscal 1985. In 1986 we would still be in the definition phase and the funding would be in the range of 250 to 300 million. In Fiscal 1987, if the studies proceed as we expect them to, we would request money to begin the hardware development and that would be in the range of about a billion two. After that, the figures would increase to a level of about two billion dollars a year during the peak of

development activities. Probably up a little bit above two billion.

QUESTION: INAUDIBLE.

BEGGS: 1992 - 1993 time period, Bill. I would like to add just a calm word on that. A lot has been made of the fact that the station probably is going to cost more than the eight billion dollars that NASA has projected. And it is certainly true that we don't expect that once we have this station operational that the NASA program will stop, in fact, it's only just beginning. We will continue to work on the station with experiments, and we will continue to develop the station both in a commercial and scientific way, spending parts of our budget beyond the early 1990s - as I said, working into the twenty-first century. So in that sense, the eight billion dollars is what gets you that initial operating capability, and beyond that we will be spending from our program funds to use the station.

SILVERSTONE: Ken Silverstone, Defense Daily. I'd like to ask you something about the new initiative. You say you're going to have one percent real growth a year. I'd like to know, how much funds do you think you'd have available in the next couple years for new starts beyond the space station; what might some of those initiatives be; and thirdly, you talk about stepping stones to more ambitious space initiatives. Are you considering a lunar base or any type of return to the moon?

BEGGS: Not at this time.

QUESTION: What about in five years?

BEGGS: Golly, I won't even be here five years from now.

QUESTION: Can we quote you on that?

(Laughter)

BEGGS: Yeah, you can quote me on that. I really don't know how to answer that question. You know, NASA has always had plans for the out years - if you go back to the early 70's you can dig out Verner Von Braun's long-range plans which will take you out a hundred years or so, if you want to do it - and they include things like lunar bases and manned visits to Mars and things like that, and those things are still in our dreams. When we might initiate them or when they might come, I really would hesitate to conjecture. To answer your question, though, as to whether that one percent real growth does allow for new starts, it does. There is a wedge in the out years, as we are projecting these budgets, that will ride for new initiatives, and we expect that the program will continue to remain vigorous and healthy in those years. Things like - very ambitious things like - lunar bases and so forth, I think remain for the future. We'll continue to look at them from time to time and worry as to when the budget might allow you to do that. But I really think you're looking into the years beyond the beginning of the second millenium.

PAYNE: Seth Payne, Business Week. Would you elaborate just a little on this private participation, Mr. Beggs, on the space station. Are you talking about developmental costs? When will

you expect private sector money to come in and at what level of funding do you think you might attract on this?

BEGGS: I don't really know the answer to the last part of that question, Seth. I think there has been quite a lot of venture capital money raised in the last year or so. We've seen money in the order of 60 to 100 million dollars raised fairly readily for some space-related private initiatives and I think it's conceivable, and in fact, we've had some feelers from people along the lines that they would either like to buy a module or a piece of a module, with an eye to using that in a commercial way, right from the initial operating capability. If you were to do that, you're talking about several hundred billion dollars. Whether there's that kind of money out there as venture capital for this kind endeavor, we'll just have to see. But I think the potential is there for substantial investments - whether they invest in buying an entire module, a piece of a module or just buying a piece of space or leasing a piece of space on it to do what they want to do.

PAINE: (Inaudible) . . . development of this basic station itself?

BEGGS: If someone came to us with a proposal that they wanted to invest several hundred million dollars in a module or a piece of a module, we would certainly incorporate them right into our development plan. You bet. And make it possible for them to get what they want. I think that there is a very good possibility that we will see one or more come in and want to do that.

JOHNSON: We'll take two more questions here, go to Kennedy and then come back here.

BENSON: Johann Benson, Aerospace America. Can you tell us why you restructured the Advanced Communications Technology Satellite program?

BEGGS: Yes. We had a private contractor come in in December and file to launch a commercial satellite in the 20/30 gigahertz range. And in view of the fact that we have private money coming in to fly a satellite, we will, therefore, have someone up there exploring in that frequency, part of the frequency spectrum, and so we get the transmission characteristics and a lot of the other objectives that we were seeking to establish. Obviously, he's not going to be doing everything that we would have liked to do, but he's spending private money to operate in that area. So, in essence, we've declared victory in that part of it because we've got commercial money coming in and operating. So we'll continue our ground technology work and our ground test work to keep moving ahead in the technology, but we don't think we need to fly.

ROSENTHAL: Harry Rosenthal, Associated Press. You mentioned the reimbursements that are coming in for the shuttle. I wonder, if for the Fiscal Year 1985, what kind of reimbursements do you expect from the shuttle as against what kind of costs? In other words, profit and loss.

BEGGS: The income is about 675 million. It's kind of hard to answer the second part of that question as to what the costs are. The operating costs, though, are in the order of 1.7-1.8 billion.

QUESTION: (inaudible)

BEGGS: Well, alright. Tommy reminds me the budget is a billion three, so we want to keep the numbers straight. But what I'm trying to do is give you a feel for the overall cost. If we were to shut off - say we were going to stop and shut off the development of the shuttle this year, which we're not about to do because there are some things we have to continue to improve and some capability we need to add - you're probably talking somewhere in that range. That is, from a billion three to a billion seven or so. The reimbursements on that amount to about one-third of the cost. So we're making good progress in recovering our cost - one-third of the operating cost, right . . . The total, Hans reminded me, the total costs are about 3.3 billion. That includes the development and capability of manufacturing enhancements.

JOHNSON: I understand there are no questions from Johnson, so we'll go to Kennedy. Kennedy, do you have questions:

KENNEDY: Yes, we have a couple of questions here.

BENEDICT: Howard Benedict, AP. I wonder if I could have the budget figures for the next two years. I got the 7.9 billion in '86 and the 9.2 billion in '89 but I didn't get the two in between.

BEGGS: 7.9 in '86 - 8.3 in '87 - 8.8 in '88. Now these figures are projected, of course, with the standard run-out of escalation rates that the OMB projects.

GORDON: Gordon, Aerospace Flight. In view of the fact that the budget does not include money for expendable vehicles in Fiscal 85, could you tell us something about the status of your negotiations on Centaur and Delta?

BEGGS: Yes. We have an acceptable proposal for the Atlas - to take over the Atlas/Centaur line. We will negotiate an agreement on that, I expect, within the next month or two. We also have an acceptable proposal for the Delta vehicle which is a little bit different than the one for the Atlas and we will negotiate that within the next few months. So we, with the completion of those agreements, we expect to move out of the business of expendables...

KENNEDY: We have some more questions at the Cape.

BEGGS: After FY 85, there's about a hundred million dollars left to spend for the expendable which, of course, is all reimbursed by the customers who will fly on those.

JOHNSON: Are there any further questions?

BENEDICT: Howard Benedict, AP, again. Mr. Beggs, I'd like to ask you if you've had any discussions with members of Congress and what level of support you might expect on the space station up there?

BEGGS: We've had some discussion with the Congress, and generally the reaction has been favorable. As one would expect, not everyone is totally on-board, so we still have a job in presenting our proposals to the committees, but generally I would say a favorable response. I think the -- if you caught the Democratic Party's reponse to the State of the Union address, that response was favorable to the President's space iniative.

QUESTION: (Inaudible) from Today. Mr. Beggs, have you done any projections as to what year, if any, the shuttle may break even on operating costs?

BEGGS: Well, I've said before towards the end of the decade. I don't have any reason to change that. '88, '89 time period is what we're aiming at.

KENNEDY: That wraps it up.

BEGGS: I understand there is one question at Johnson.

JOHNSON: Your name and affiliation, please.

PARRISH: Elton Parrish with Metro News. I wonder what you envision to be the the minimum and maximum levels of staffing. And if the private sector is allowed to buy a portion of a module or a module, if they will be allowed to staff that with their own people, and would you ferry those people there?

BEGGS: Would we allow the private sector guy to carry his people there? Yes. How many it would be, I don't know. I could only conjecture at this time. We're talking about a space station which has an initial manning of 6 to 8, and as a consequence of

that, I should add here, we're planning a very high degree of automation and robotics on this station in order to make that number of people very productive, so it won't take a whole lot, but we will incorporate not only people from the private sector, but we also expect to be carrying folks up from our international partners. This will be truly an international venture.

PARRISH: So would the station -- do you envision it as something that can grow, that you could add more modules to it in the future?

BEGGS: Yes, definitely.

PARRISH: Thank you.

BEGGS: This would be the initial operating capability: we would add to it as we saw the need.

JOHNSON: We will now take further questions from Washington.

DOOLING: Dave Dooling, Huntsville Times. What will be the management setup here at headquarters? Will there be a new associate administrator; will there be someone under General Abrahamson; and what will be the consideration and so on that the Agency goes through in assigning the lead center?

BEGGS: We will create a new associate administrator to run this program, and we have been working with the centers. This is the kind of a project that leads us to expect that almost all of the centers, all eight of them, will have some role, and an important role, in the development. We will appoint a lead center in the near future. I would expect it probably will be Johnson, but I have't fully made up my mind on that.

JOHNSON: Mike?

MIKE: A couple of numbers. What is the run-out cost for the upper atmospheric satellite?

BEGGS: $630 million, $650 million.

MIKE: Can you give us a comparable number to this $675 million income you expect for Fiscal Year '85; can you compare that with the income you had for '84?

BEGGS: $270 in '84.

MIKE: $270?

BEGGS: $270 in '84.

DAVID: Leonard David with Space World Magazine. I had 23 questions here, but I'll whittle it down to three. How much to operate per year the station after its initial -- no idea? (Inaudible.)

BEGGS: As Tommy said, it really depends on the level of activity we'll be running, how many experiments we'll be putting in, and how much commercial activity we can expect and how much foreign activity that we'll expect. You know, if we do share the development of this with the international community, we will have to promise them, just as we've promised them on all of our joint projects, some percentage of the capability of the station, and so the whole thing depends on how that fits together, and all that planning needs to be done, and I am sure it will be a developing process over the coming years.

DAVID: And two, they're not related, but I'll get them in quickly, you mentioned global habitability at Unispace. Is that a dead issue now? Where did that go?

BEGGS: Now, I just gave up using that term, but UARS is, of course, one of the key elements of that.

DAVID: The last question, is any money hidden for extended orbiter duration, increasing its mission . . . ?

BEGGS: There's a little bit of study money there, maybe $3 million or something they're still studying. It isn't hidden; it's there. You can find it.

WALDROP: Mitch Waldrop, Science. Two quick questions on space science. Why was the SIRTF mission delayed for a year, or delayed, and is Gravity Probe B back in the budget?

NEWMAN: SIRTF, you know, was an infrared telescope designed to be put in the shuttle payload, and it was delayed because the results of the Infrared Astronomical Satellite were such that it clearly demonstrated the value of having a free flyer rather than having a shuttle-attached payload, which would have a limited lifetime on orbit, and therefore a study was initiated as to whether or not to make SIRTF a free flyer. That accounts for the delay. I believe the SIRTF will be a very, very strong candidate for one of the space station platforms, and that's what we're looking at now. With respect to Gravity Probe B, we've done a very intensive -- had a very intensive look at this thing during the last year, and particularly the question as to whether

the engineering portion of that experiment was even a feasible thing. We convinced ourselves that it can in fact be done and we are now increasing the funding for that program, looking towards a start perhaps two or three years from now, when some of the design definition questions get settled.

COVAULT: Craig Covault with Aviation Week. Somebody ought to raise the aeronautics program, so I will. Review some of the highlights of aeronautics, some of the things that are important in the 13 percent increase.

BEGGS: Ray, do you want to take that for us? Ray Colladay, Dr. Colladay from (inaudible). Come on up here to the mike.

[end of side one]

COLLADAY: . . . the planned buildup of the development of the numerical aerodynamic simulation capability at Ames, and certain experimental aircraft programs that we have underway and started in '84, notably the X-Wing program, that is in the rotorcraft area, high speed rotorcraft, and the buildup in another '84 program as it comes in '85 in advance, composites for large structural elements of aircraft. Those are the principal areas of new growth in expanding programs in the aeronautics effort.

JOHNSON: The young lady here.

FOLEY: Theresa Foley with Satellite Week. I've got a question and a followup. First of all, the Space Telescope problems, they were unveiled in congressional testimony last year as a bit of a surprise to most of us in the news media. I was wondering if

there is any similar surprise in store this year, or if all of your projects are on schedule and within budget, and then I would like to follow that up.

(Laughter.)

BEGGS: That's a "gotcha"! (Laughter.) We're doing a little better this year than we were last year. I think that we don't see any major surprises on the horizon, but in this business you never know. What we're trying to do, as you know, is explore at the cutting edge, as my friend, Jim Webb, used to say. And when you're exploring at the cutting edge, you sometimes have surprises. The Space Telescope surprise was a disappointment because it came so suddenly. It wasn't a disappointment in the sense that we had growth in the program. I think in a program that really works right at the edge of technology, as that program does, one can reasonably expect he's going to have some growth, and we did. But we let it slip up on us, and we don't like to do that in this Agency, because we think we're smarter than that and most of the time we are. But I don't see any major surprises on any of our programs this year. All of our programs from time to time encounter problems, and we try to keep ahead of them.

JOHNSON: Did you have a followup?

FOLEY: Yes, I did. I'd like to know also if you can bring us up to date on the Space Telescope problems? Have you got it all enhanced now, and have you asked for enough money, or will there be more reprogramming?

BEGGS: We think we've asked for enough money. There are still some hurdles to get over. We are approaching this, by the end of this year, by the end of the third quarter of this year, calendar year, we will be shipping the optical telescope assembly, which is the part that contains most of the problems that we've encountered -- the fine guidance system, the latches, the big 2.4 meter mirror which we've had so much trouble getting to its final state. But in the third quarter we will ship that out to Lockheed, who will then assemble that into the total structure for launch, so that's a very significant milestone, and we are right now meeting the various intermediate milestones to do that. So we're in pretty good shape on that, not by any manner of means beyond the point where the schedules could slip a week or two, but as you can see, that's only eight, nine months away, so the schedule is not going to slip very much, or not likely to slip very much. Once we get out to Lockheed, then the problems are in a systems nature in incorporating that major assembly with all of the other instruments that go on the Space Telescope. We still have some problems with some of those instruments. Some of them which we have tested will require a little bit more work and they will have to then go out to Lockheed for incorporation into the final assembly. But I think we will be over the major hurdles by the end of the year, at least the major technical problems. Then it's a question of meeting the schedule dates and the assembly of the device and the final checkout of the entire assembly, getting ready for launch out there in 1986.

SILVERSTONE: Ken Silverstone, Defense Daily. Can you tell us how much you requested from OMB this year? Was anything major cut out, and if I can try again, what are some of your major new start plans for FY 86, outside of the lunar base?

BEGGS: Lunar base?

SILVERSTONE: That you might want to start next year.

BEGGS: Oh, me! This list has been published. I can recite the kind of things, the AXAF, the Advanced X-ray Facility, the OPEN origin of supplies within the earth's neighborhood, the Gravity Probe B which has been talked about here, the lunar geochemical orbiter, several geomissions -- yes, the orbiting maneuvering vehicle which would go with the space station eventually. You know, then there are things like an asteroid rendevous, and -- that list is public and we can get it for you, if you're interested. All those things are still on the list. Our dreams remain constant.

JOHNSON: Year by year.

BEGGS: Yes?

QUESTION: (Inaudible.)

BEGGS: I'm sorry?

JOHNSON: He asked if you had a priority.

BEGGS: Oh, yes.

(Laughter.)

QUESTION: (Inaudible.)

BEGGS: Yes, we do have that science plan; the priorities haven't changed from that. That was published this past spring, about a year ago -- a little less than a year ago -- and it lists our priorities in excruciatingly fine detail. We'd be happy to give it to you.

JOHNSON: It was published; I'll get you a copy. Question over here?

BAUMANN: Dave Baumann with USA Today. I understand you're going to be going to Europe to be more specific in negotiating with different Europeans as to what role they want to play in the space station. Can you elaborate on that at all? And . . .

BEGGS: Well, let me . . .

QUESTION: . . . and also . . .

BEGGS: Let me say something up front. I will be going to Europe and I'll probably be going to Japan, somewhat to my regret - to my regret, I don't like to travel over there very much -- in the very near future, and I'll be going to Canada and I'll probably be going to some other places to talk to the folks. But I will be -- this trip will not be to divide up the pie. We will not decide what part of the program that they will take on. It will be to set up the mechanisms and to get their interest in participating in this next year or so of planning so that we can work out the part that they might want to play. It will also be to try to get them to thinking about how much money they want to bring to the table, because depending on how much resource

they're willing to commit will determine what part of this program they can undertake. And so I will be looking to interest them further in the program, to set up mechanisms to join with us to determine what part each of us will play, and to get them thinking about the amount of money that they want to put into the program, and as far as I'm concerned, the more the merrier. We will be asking for large participation, if they want to take that on. They have been forthcoming in the past and I'm sure they'll be forthcoming in the future.

BAUMANN: I have one follow-up: There was a little blurb about England, that they're going to be very concerned over how the station will be used, if it will have any military applicability. What kind of maneuvering . . .

BEGGS: None that I know of.

BAUMANN: None that you know of.

BEGGS: None that I know of. I really -- I won't comment. (Laughter.)

BENSON: Johan Benson, Aerospace America. Two quick ones: What percentage would you consider to be an optimum participation by European and Japanese interests in the space station, and with respect to the 600 people that you added on last year, can you tell me how many went into aeronautics?

BEGGS: We can give you the increase in aeronautics. Is that the number you want? It's (inaudible) -- a little over 100 million . . .

JOHNSON: No, no.

BEGGS: People. I'm sorry, a little over 100 people. Excuse me, I'm sorry.

JOHNSON: Harry.

BEGGS: Dollars and people sometimes get confused, in my mind, anyway. Yes.

QUESTION: (Inaudible.)

BEGGS: Well, I don't know what's optimum, but if we could get -- say if the Europeans and the Canadians put something over a billion dollars in the shuttle program, if we get a couple billion this time, I'd consider that a very happy amount of money, but I really don't know the answer to that question. We'll have to talk to them and see what their -- how deep their interest runs, and what resources they might get. Both the ESA budget and the Japanese budget for space are up significantly since the early '70's when they agreed to take part in the shuttle program. So I would hope for somewhat more effort than we got in the case of the shuttle.

JOHNSON: Harry Rosenthal.

ROSENTHAL: Harry Rosenthal, AP. I'd like to re-ask a question that you apparently didn't hear earlier from another gentleman. How much did NASA ask for in this current budget; in other words, what percentage did you get?

BEGGS: Golly, I hate to answer a question like that. The reason I hate to answer it is that obviously -- and I will answer it --

obviously, when we go into a negotiation with the OMB, both we and the OMB know that we probably started at a point above what we expect to end up at, so the number we go in with is not too significant a number. But we went in with about $8.1 billion and ended up with $7.5. We're happy with the $7.5. We . . .

QUESTION: . . . NASA was cut $600 million.

BEGGS: We were not cut $600 million.

JOHNSON: That's the point, that's the trap here, and please don't say that; it isn't true.

BEGGS: It's unfortunate that we have to, that the Congress has made us go public with all these numbers, because they really are numbers that -- I see my friend Willis Schaply sitting back there, and he can tell you that this is an iterative process, right, Willis?

(Inaudible.)

(Laughter.)

BEGGS: (Inaudible) feels good when it stops.

(Laughter.)

ROSENTHAL: I'd like to follow that up, please. What didn't you get out of that $600 million that you had as fat?

BEGGS: I'm not going to answer that. I won't comment on that.

JOHNSON: Gentleman back there.

ROTHMANN: Robert Rothmann, Congressional Quarterly. I have a couple questions about what appear to be decreases over last year. What of a decrease in shuttle operations is attributable to other than an increase in reimbursements?

BEGGS: Well, the total is going up. The activity is going up. Any difference you see in those numbers year-to-year is due to the effect of a number of things. We are now, for example, in the spares lay-in period with the shuttle; we're going to be buying -- how much, Abe -- something like $2 billion, again, with also, with reimbursements, so the actual, the absolute, number is increasing. Of course, we're getting, as we stated earlier, an increased amount of reimbursements and the amount on budget goes down commensurately with the amount that the reimbursements come in. But as I say, we're laying in spares now, both the logistic spares and our structural spares, and we'll be spending how much -- $6, $700 million for the spares -- yes $620 in '85 for spares. We are also continuing to buy the ancillary equipment that we had postponed buying earlier on in the period in order to give ourselves full capability for the system. We bought another shuttle training aircraft which we're converting now. We will try to get the Air Force to divert one of those 747's that they are buying to make another shuttle carrier aircraft, and we'll pay for some mods on that to make it capable. In short, there's a whole list of things that we're adding to the system year by year to make things go, to make the system more capable, and as Tommy reminds me, most of the increases do relate to hardware to fly the shuttle.

JOHNSON: Mike, we'll take your question next, and then we have time for just a couple more. Are you finished?

ROTHMANN: Yes.

JOHNSON: Are there any more questions? The gentleman behind you, and then Theresa.

QUESTION (speaker unidentified): Two parts. Dr. Mark, you referred to SIRTF as looking like a good candidate for a free flyer associated with the space platform. Would that mean that a US follow-up to IRAS, with whatever that represents for participation by US scientists in infrared astronomy data, would be a decade or more away?

MARK: Well, eight years.

QUESTION (speaker unidentified): And the other space science question is, could you provide some numbers that relate to the degree to which the SSEC's plan is, in fact, going forward, even if it's not a planetary explorer type of line item, but are there bulk buys for planetary observers, are there long lead items in this budget for Mars II's, are there . . . ?

MARK: No, the SSEC has the Mars orbiter, it has the cometary fly-by, it has a Titan probe, and it has the lunar orbiter. You know, that's part of the menu. And I don't think there will be a decision as to which one we do next until next year, next budget year.

JOHNSON: Theresa?

FOLEY: Theresa Foley, Satellite Week. I'd like to know if you could talk about TDRSS a little bit, whether B and C are being modified, when they will be launched, and can you tell me if

there's some relationship between how many TDRSS's are in orbit and what kind of service you're getting, and how much money you asked for in the budget? I was just wondering if any of the '84 money will get carried over into '85 since you're not getting the same level of service that you thought you would be.

BEGGS: Well, our deal with the bank on this wasthat, when we initiated operation, we would start repaying the loan, and we have started to do that. It was not contingent on full operation of the system, as I recall the loan agreement. But I guess the answer to your more specific question right now is, we're right in the midst of working with the Air Force to work out a cure or a fix for the IUS problem that we encountered on the first one, and,until we come up with that fix and have assured ourselves that we've got a reliable and completely fixed system, we're not going to fly another TDRSS. We've got a very expensive satellite and we're not going to put it up there if we're not absolutely sure we're going to get it into a proper orbit. We, we're still sort of aiming for the end of the year to get the second one up. We'd like to get the three up that we said would comprise the initial complete operating capability, that's two plus a spare, and we hope to do that by sometime the first half of next year. But again, it depends on how well we progress on these various problems that we've encountered on the IUS.

JOHNSON: Ladies and gentlemen, that brings to a conclusion this briefing on the 1985 budget. A reminder, if you want a

transcript, you may sign an envelope. Also, this year if you would rather have an audio transcript, cassettes will be made available. Just indicate on the envelope which you would like. Thanks for coming.

[end of recording]

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For Release

UPON RELEASE OF PRESIDENT'S
BUDGET MESSAGE, 12:00 NOON
FEBRUARY 1, 1984

BACKGROUND MATERIAL

NASA FY 1985 BUDGET BRIEFING

HOLD FOR RELEASE AT 12:00 NOON, EST, WEDNESDAY, FEBRUARY 1, 1984

NOTE: This statement relates to the Fiscal Year 1985 Budget and is subject to the same conditions. There should be no premature release of this statement nor should any of its contents be paraphrased or alluded to in earlier stories. There is a total embargo on the Budget until 12:00 Noon, EST, February 1, 1984, which includes any and all references to any material in the Budget Appendix, or support statements.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

BUDGET SUMMARY

BUDGET PLAN
(Thousands of Dollars)

BUDGET PLAN	FY 1983[a/]	FY 1984	FY 1985
Research and development	1,902,500	2,028,200	2,400,100
Space Flight, Control and Data Communications	3,633,010	3,775,300	3,600,300
Construction of facilities	103,530	155,500	160,000
Research and program management	1,197,400	1,258,500	1,331,000
TOTAL BUDGET PLAN	6,836,440	7,217,500	7,491,400
OUTLAYS	6,663,885	7,068,200	7,370,000

a/ Shown on a comparative basis with the FY 1984-85 budget structure.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

RESEARCH AND DEVELOPMENT PROGRAMS

BUDGET PLAN
(Thousands of Dollars)

	FY 1983	FY 1984	FY 1985
SPACE STATION	---	---	150,000
SPACE TRANSPORTATION CAPABILITY DEVELOPMENT	415,500	431,700	361,400
SPACE SCIENCE AND APPLICATIONS	1,060,100	1,134,000	1,371,500
Physics and astronomy	470,300	567,600	677,200
Planetary exploration	186,400	217,400	286,900
Life sciences	55,700	58,000	63,300
Space applications	347,700	291,000	344,100
TECHNOLOGY UTILIZATION	9,000	9,000	9,500
AERONAUTICS AND SPACE TECHNOLOGY	404,500	439,300	492,400
Aeronautical research and technology	280,000	302,300	342,000
Space research and technology	124,500	137,000	150,000
TRACKING AND DATA ACQUISTION	13,400	14,200	15,300
TOTAL	1,902,500	2,028,200	2,400,100

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

OFFICE OF SPACE FLIGHT

BUDGET PLAN
(Thousands of Dollars)

	FY 1983	FY 1984	FY 1985
SPACE TRANSPORTATION CAPABILITY DEVELOPMENT	415,500	431,700	361,400
SPACELAB	121,200	112,500	69,300
UPPER STAGES	167,000	143,200	92,400
ENGINEERING AND TECHNICAL BASE	70,300	93,100	105,700
PAYLOAD OPERATIONS AND SUPPORT EQUIPMENT	44,400	59,600	61,300
ADVANCED PROGRAMS	12,600	20,000	14,500
TETHERED SATELLITE SYSTEM	---	3,300	18,200

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

SPACE SCIENCE AND APPLICATIONS

BUDGET PLAN
(Thousands of Dollars)

	FY 1983	FY 1984	FY 1985
PHYSICS AND ASTRONOMY	470,300	567,600	677,200
SPACE TELESCOPE DEVELOPMENT	182,500	195,600	195,000
GAMMA RAY OBSERVATORY DEVELOPMENT	34,500	86,200	120,200
SHUTTLE/SPACELAB PAYLOAD DEVELOPMENT AND MISSION MANAGEMENT	81,000	80,900	105,400
EXPLORER DEVELOPMENT	34,300	48,700	51,900
MISSION OPERATIONS AND DATA ANALYSIS	61,400	68,100	109,100
RESEARCH AND ANALYSIS	28,500	35,800	36,900
SUBORBITAL PROGRAM	48,100	52,300	58,700
LIFE SCIENCES	55,700	58,000	63,300
LIFE SCIENCES FLIGHT EXPERIMENTS	24,000	23,000	27,100
LIFE SCIENCES RESEARCH AND ANALYSIS	31,700	35,000	36,200
PLANETARY EXPLORATION	186,400	217,400	286,900
GALILEO DEVELOPMENT	91,600	79,500	56,100
VENUS RADAR MAPPER MISSION	---	29,000	92,500
INTERNATIONAL SOLAR POLAR MISSION	6,000	6,000	9,000
MARS GEOSCIENCE/CLIMATOLOGY ORBITER	---	---	16,000
MISSION OPERATIONS & DATA ANALYSIS	38,500	43,400	58,800
RESEARCH AND ANALYSIS	50,300	59,500	54,500
SPACE APPLICATIONS	347,700	291,000	344,100
SOLID EARTH OBSERVATIONS	(128,900)	(75,400)	(63,600)
Landsat-4	58,400	16,800	---
Extended mission operations	1,100	---	---
Shuttle/spacelab payloads	14,500	16,000	18,100
Geodynamics	28,100	28,000	29,900
AgRISTARS	15,000	---	---
Research and analysis	11,800	14,600	15,600

SPACE SCIENCE AND APPLICATIONS (Continued)

BUDGET PLAN
(Thousands of Dollars)

	FY 1983	FY 1984	FY 1985
SPACE APPLICATIONS (Continued)			
ENVIRONMENTAL OBSERVATIONS	(156,900)	(162,000)	(220,700)
Upper atmosphere research & analysis....	27,700	28,500	31,000
Atmospheric dynamics and radiation research and analysis.....	26,500	27,500	28,500
Oceanic processes research & analysis...	17,000	18,200	19,400
Space physics research & analysis.....	15,200	16,700	16,700
Shuttle/spacelab payload development....	3,700	7,600	7,800
Operational satellite improvement program.....	6,000	600	---
Earth radiation budget experiment.....	24,000	15,500	8,100
Extended mission operations.....	22,800	27,400	29,500
Interdisciplinary research & analysis...	---	---	1,000
Tethered satellite payloads.....	---	---	3,000
Scatterometer.....	---	---	15,000
Upper atmosphere research satellite mission.....	14,000	20,000	60,700
MATERIALS PROCESSING IN SPACE	22,000	23,600	23,000
COMMUNICATIONS	32,400	21,100	20,600
INFORMATION SYSTEMS	7,500	8,900	16,200

TECHNOLOGY UTILIZATION

TECHNOLOGY UTILIZATION	9,000	9,000	9,500

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

AERONAUTICS AND SPACE TECHNOLOGY

BUDGET PLAN
(Thousands of Dollars)

	FY 1983	FY 1984	FY 1985
AERONAUTICAL RESEARCH AND TECHNOLOGY	280,000	302,300	342,400
RESEARCH AND TECHNOLOGY BASE.....	(198,475)	(215,800)	(233,300)
SYSTEMS TECHNOLOGY PROGRAMS.....	(81,525)	(86,500)	(109,100)
Rotorcraft Systems Technology.....	22,300	27,600	26,500
High-Performance Aircraft Systems and Technology.....	14,950	19,900	21,000
Subsonic Aircraft Systems Technology....	16,975	5,000	19,000
Advanced Propulsion Systems Technology..	27,300	17,000	16,100
Numerical Aerodynamic Simulation.....	---	17,000	26,500
SPACE RESEARCH AND TECHNOLOGY	124,500	137,000	150,000
SPACE RESEARCH AND TECHNOLOGY.....	(121,500)	(132,400)	(145,100)
Space research and technology base.....	116,304	125,400	136,000
Systems technology programs.....	(5,196)	(7,000)	(9,100)
Space flight systems technology.....	5,196	7,000	7,000
Chemical propulsion system technology.	---	---	2,100
STANDARDS AND PRACTICES.....	3,000	4,600	4,900

SPACE TRACKING AND DATA SYSTEMS

TRACKING AND DATA ACQUISITION	13,400	14,200	15,300
ADVANCED SYSTEMS.....	13,400	14,200	15,300

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

SPACE FLIGHT, CONTROL AND DATA COMMUNICATIONS PROGRAMS

BUDGET PLAN
(Thousands of Dollars)

	FY 1983	FY 1984	FY 1985
SPACE SHUTTLE PRODUCTION & OPERATIONAL CAPABILTY	1,725,810	1,649,300	1,465,600
ORBITER	903,910	716,300	606,800
LAUNCH AND MISSION SUPPORT	246,300	277,700	234,800
PROPULSION SYSTEMS	575,600	618,000	599,000
CHANGES AND SYSTEMS UPGRADING	---	37,300	25,000
SPACE TRANSPORTATION OPERATIONS	1,421,700	1,452,000	1,339,000
SHUTTLE OPERATIONS	(1,338,700)	(1,402,000)	(1,339,000)
Flight operations	317,500	323,900	316,000
Flight hardware	679,200	739,100	758,000
Launch and landing operations	342,000	339,000	265,000
EXPENDABLE LAUNCH VEHICLES	83,000	50,000	---
SPACE TRACKING & DATA ACQUISITION	485,500	674,000	795,700
SPACE NETWORK	(104,300)	(259,100)	(386,500)
TDRSS contract	41,000	204,300	319,900
Other	63,300	54,800	66,600
GROUND NETWORK	242,900	249,300	223,600
COMMUNICATIONS & DATA SYSTEMS	138,280	165,600	185,600
TOTAL	3,633,010	3,775,300	3,600,300

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

FISCAL YEAR 1985 CONSTRUCTION OF FACILITIES PROGRAM

BUDGET PLAN
(Thousands of Dollars)

PROJECTS BY INSTALLATION

Space Shuttle Facilities at Various Locations as Follows:	31,200
Modification of Site Electrical Substation (JSC)	3,200
Modifications for Single Engine Testing (NSTL)	3,000
Construction of Launch Complex 39 Logistics Facility (KSC)	10,000
Construction of Solid Rocket Booster Assembly and Refurbishment Facility (KSC)	15,000
Space Shuttle Payload Facilities at Various Locations, as Follows:	6,700
Construction of Additions to Cargo Hazardous Servicing Facility (KSC)	4,600
Construction of Biomedical Research Facility (ARC)	2,100
George C. Marshall Space Flight Center	1,600
Repairs to Test Stand 500	1,600
Goddard Space Flight Center	2,200
Construction of Addition to the Network Control Center	2,200
Jet Propulsion Laboratory	12,200
Construction of Earth and Space Science Laboratory	12,200
Ames Research Center	16,500
Construction of Numerical Aerodynamic Simulation Facility	16,500
Langley Research Center	13,800
Modifications to 8-foot High Temperature Tunnel	13,800
Various Locations	13,800
Construction of 34-meter Antenna, Madrid Spain (JPL)	6,000
Modifications of 64-meter Antenna, DSS-63, Madrid, Spain (JPL)	7,800
Repair of Facilities at Various Locations, Not in Excess of $750,000 per Project	20,000
Rehabilitation and Modification of Facilities at Various Locations, Not in Excess of $750,000 per Project	25,000
Minor Construction of New Facilities and Additions to Existing Facilities at Various Locations, Not in Excess of $500,000 Per Project	5,000
Facility Planning and Design	12,000
TOTAL	160,000

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

RESEARCH AND PROGRAM MANAGEMENT

BUDGET PLAN
(Thousands of Dollars)

INSTALLATION	FY 1983	FY 1984	FY 1985
Johnson Space Center	195,161	205,382	214,105
Kennedy Space Center	161,271	169,215	180,849
Marshall Space Flight Center	184,266	188,962	195,264
National Space Technology Laboratories	6,345	9,793	10,905
Goddard Space Flight Center	180,590	187,217	199,290
Ames Research Center	107,220	114,636	123,116
Langley Research Center	132,702	139,872	148,037
Lewis Research Center	118,769	130,413	140,503
NASA Headquarters	111,020	113,010	118,931
TOTAL	1,197,344	1,258,500	1,331,000

TOTAL NUMBER OF PERMANENT WORKYEARS - END OF YEAR

Johnson Space Center	3,255	3,209	3,209
Kennedy Space Center	2,093	2,082	2,082
Marshall Space Flight Center	3,338	3,250	3,250
National Space Technology Laboratories	105	107	107
Goddard Space Flight Center	3,609	3,599	3,599
Ames Research Center	2,027	2,021	2,021
Langley Research Center	2,821	2,835	2,835
Lewis Research Center	2,520	2,591	2,591
NASA Headquarters	1,434	1,423	1,423
Subtotal, Full-Time Permanent Civil Service	21,202	21,117	21,117
Other than Full-Time Permanent	1,044	883	883
Total, Ceiling Controlled Civil Service	22,246	22,000	22,000